

He was inclined to believe that the average sample had lost some water of crystallization.

An attempt was made to separate the potassa from the soda, which were both in combination with chlorine, but the reagent applied failed to affect it. The chloride of potassium could have been but a trace. Having also observed that the quantity of iron in the mineral was small, it was considered useless to measure it.

*Epsomite on Brick-walls.*—Mr. Goldsmith remarked, with the beginning of the cold season the brick-walls of Philadelphia often become coated with a whitish incrustation. The supposition was current, to some extent, that the incrustation was a mixture of chloride and nitrate of sodium.

Mr. W. H. Dougherty, of this city, collected, in the beginning of December, a sufficient quantity of it, and examined it chemically; to his surprise he found that it reacted strongly on magnesia and sulphuric acid. The gentleman handed to Mr. G. some of the substance, which the latter redetermined. The result was the same. The epsomite contained besides, as an impurity, a small quantity of sodium, potassium, and chlorine.

Mr. Dougherty endeavored to trace out the origin of the epsomite, and analyzed some mortar which he collected from a wall that had on its surface this soluble salt. The reactions obtained proved that it was present. When fresh mortar was treated in the same way the presence of magnesia was recognized, but sulphuric acid was not found in it.

The idea that sulphuric acid, in a free state, could be present in bricks is improbable; hence, a plausible hypothesis is offered to explain its presence: The coal and gas used in the city contain small quantities of sulphur, which, when burnt, is oxidized into sulphuric acid, and this, being precipitated on the wall, will eventually also touch part of the mortar, out of which it will extract the magnesia, and thus form epsomite. From this explanation it may be inferred that the lime in the mortar cannot be any longer caustic, for caustic lime will not permit the sulphuric acid to combine with magnesia, as long as it is present in the mixture. The lime in mortar is converted into silicate of lime, but whether the magnesia is also changed into a silicate is, I presume, not known at present.

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DECEMBER 26.

The President, Dr. RUSCHENBERGER, in the chair.

Seventy-four members present.

The following papers were ordered to be printed:—